

Tuberculosis - Massachusetts

In 2005, 265 cases (case rate 4.17 per 100,000 population) of tuberculosis (TB) were reported to and verified by the Massachusetts Department of Public Health, Division of TB Prevention and Control. Although this represents a 7% decrease since 2004, the 2005 case rate is still above the year 2000 CDC objective, and the overall case rate for Massachusetts has remained statistically unchanged since 1996.

Drug Resistance

In 2005, 192 (72%) of the 265 TB cases were bacteriologically confirmed by positive culture for *Mycobacterium tuberculosis*. This represents a bacteriologically substantiated incidence rate of 3.02 per 100,000 population.

Of the 192 bacteriologically confirmed cases, drug susceptibility was performed for 190 (99%) of the isolates. Thirty-three isolates (17%) were resistant to one or more anti-tuberculosis drugs. Isolates from 22 (67% of 33 cases, 12% of 190 cases) were resistant to isoniazid (INH) either alone or in combination with other agents. Since 2003, the percent of bacteriologically confirmed TB cases with drug resistant isolates has increased from 9% to 17%.

In 2005, there were 7 cases with multi-drug resistant TB (defined as resistance to at least both INH and rifampin (RIF). This is the greatest number of MDR-TB cases reported in the last 10 years.

Race/Ethnicity

Persons in minority groups composed 78% of the TB cases in 2005. Case rates for whites and Hispanics gradually declined between 1992-1996 and have since leveled off. For blacks, the case rate has declined 61% from 48.1 per 100,000 in 1991 to 21.8 in 2005. Asians continue to have a much higher case rate than any other group (35.7 per 100,000 in 2005).

Higher Risk Groups

Non-U.S. born (persons born outside the United States and its territories): Among the 205 non-U.S. born persons with TB in 2005, those from 11 countries accounted for 134 (65%) of the non-U.S. born TB cases. These countries included: China, 20 cases (8%); India, 21 cases (8%); Haiti, 17 cases (6%); Vietnam, 16 cases (6%); Cambodia, 15 cases (6%); Brazil, 11 cases (4%); Cape Verde, 9 cases (3%); Guatemala, 7 cases (3%); Dominican Republic, 6 cases (2%); Kenya, 6 cases (2%); and El Salvador, 6 cases (2%). The remaining 78 cases (35%) were from 38 other countries. Between 1993 and 2005, 49% of all non-U.S. born TB cases were diagnosed within 5 years of arrival to the US.

Homeless: Of the 265 cases of TB reported in 2005, 9 cases (4%, case rate 29.0 per 100,000) were reported to have been homeless. Among the 9 homeless cases, 2 (22%) were reported from the City of Boston.

Incarcerated: Since 1993, the numbers of TB cases diagnosed in correctional facilities has remained constant with no more than 5 cases per year. In 2005, 4 cases (2%, case rate 20.0 per 100,000) of TB were diagnosed in either state or county facilities.

HIV co-infected: Twenty-two cases of TB (8%) in 2005, were also co-infected with HIV – a rate similar to previous years.

Children: In 2005, 13 TB cases (5%, case rate 1.0 per 100,000) were in children <15 years of age, of which 10 (77%) were children of minority communities. The case rate among minority children in 2005 was 3.6 per 100,000 population.

Characteristics of TB Cases 2005 (N=265)

Demographics	#	%
Sex		
Male	152	(57%)
Female	113	(43%)
Race Ethnic		
White, non-Hispanic	59	(22%)
Black, non-Hispanic	75	(28%)
Hispanic	45	(17%)
Asian	86	(33%)
Place of Birth		
US-Born	65	(23%)
Non US Born	205	(77%)
Age		
<1-24	41	(16%)
25-44	101	(38%)
45-64	70	(26%)
65+	53	(20%)
Clinical Presentation		
Primary Site of Disease		
Pulmonary	171	(65%)
Extra pulmonary	94	(36%)
Chest X-Ray Results		
Cavitary Disease	65	(25%)
Non-cavitary Disease	169	(64%)
Normal	30	(11%)
Not done	1	(<1%)
High Risk Groups+		
Non-U.S. Born	205	(77%)
Children < 15 Yrs.	13	(5%)
Prison/jail	4	(2%)
Homeless	9	(4%)
Excessive alcohol	18	(7%)
HIV positive	22	(8%)
Injecting and non-injecting drug abuse	8	(3%)
+Not mutually exclusive groups		
Drug Resistance Cases (N=192 Bacteriologically Confirmed Cases)		
Pattern		
Resistance to at least 1 drug	33	(17%)
Resistance to at least INH	22	(12%)
Resistance to at least INH + RIF	7	(4%)

Massachusetts Department of Public Health, Division of Tuberculosis Prevention and Control

Tuberculosis Cases and Case Rates per 100,000 Populations:

23 Largest Reporting Communities Plus 2 Additional High Risk Cities, Massachusetts, 2005

Year															5 Year Average		
2001			2002			2003			2004			2005					
CITY	No.	(%)	Rate	No.	(%)	Rate	No.	(%)	Rate	No.	(%)	Rate	No.	(%)	Rate	No.	Rate
BOSTON	75	(28)	12.7	67	(25)	11.4	64	(25)	10.9	70	(25)	11.9	57	(22)	9.7	67	11.3
BROCKTON	12	(4)	12.7	5	(2)	5.3	9	(3)	9.5	3	(1)	3.2	10	(4)	10.6	8	8.3
BROOKLINE	4	(2)	7.0	3	(1)	5.3	1	<1	1.8	2	<1	3.5	2	<1	3.5	2	4.2
CAMBRIDGE	6	(2)	5.9	7	(3)	6.9	5	(2)	4.9	8	(3)	7.9	16	(6)	15.8	8	8.3
CHELSEA*	<5	-	-	7	(3)	20.0	<5	-	-	<5	-	-	6	(2)	-	5	14.3
CHICOPEE	2	<1	3.7	3	(1)	5.5	4	(2)	7.3	3	(1)	5.5	3	(1)	5.5	3	5.5
FALL RIVER	4	(2)	4.4	2	<1	2.2	2	<1	2.2	2	<1	2.2	2	<1	2.2	2	2.6
FRAMINGHAM	6	(2)	9.0	7	(3)	10.5	3	(1)	4.5	1	<1	1.5	5	(2)	7.5	4	6.6
HAVERHILL	3	(1)	5.1	3	(1)	5.1	1	<1	1.7	1	<1	1.7	0	-	-	2	2.7
LAWRENCE	10	(4)	13.9	5	(2)	6.9	5	(2)	6.9	3	(1)	4.2	6	(2)	8.3	6	8.1
LOWELL	17	(6)	16.2	13	(5)	12.4	10	(4)	9.5	20	(7)	19.0	14	(5)	13.3	15	14.1
LYNN	6	(2)	6.7	8	(3)	9.0	7	(3)	1.9	9	(3)	10.1	15	(6)	16.8	9	10.1
MALDEN	5	(2)	7.1	10	(4)	17.8	7	(3)	12.4	12	(4)	21.3	7	(3)	12.4	8	14.2
MEDFORD	3	(1)	5.4	3	(1)	5.4	6	(2)	10.8	2	<1	3.6	4	(2)	7.2	4	6.5
NEW BEDFORD	6	(2)	6.4	5	(2)	5.3	2	<1	2.1	7	(2)	7.5	6	(2)	6.4	5	5.6
NEWTON	1	<1	1.2	1	<1	1.2	4	(2)	4.8	1	<1	1.2	3	(1)	3.6	2	2.4
PLYMOUTH	0	-	-	2	<1	3.9	0	-	-	1	<1	1.9	1	<1	1.9	1	1.6
QUINCY	4	(2)	4.5	13	(5)	14.8	14	(5)	15.9	11	(4)	12.5	6	(2)	6.8	10	10.9
REVERE*	6	(2)	12.7	6	(2)	12.7	5	(2)	10.6	6	(2)	12.7	<5	<1	-	5	10.2
SOMERVILLE	4	(2)	5.2	4	(2)	5.2	2	<1	2.6	5	(2)	6.5	4	(2)	5.2	4	4.9
SPRINGFIELD	8	(3)	5.3	9	(3)	5.9	8	(3)	5.3	4	(1)	2.6	6	(2)	4.0	7	4.6
TAUNTON	1	<1	1.8	1	<1	1.8	0	-	-	1	<1	1.8	0	-	-	1	1.1
WALTHAM	6	(2)	10.0	10	(4)	16.7	4	(2)	6.7	3	(1)	5.0	3	(1)	5.0	5	8.7
WEYMOUTH	3	(1)	5.6	0	-	0.0	0	-	-	4	(1)	7.4	2	<1	3.7	2	3.3
WORCESTER	9	(3)	5.2	13	(5)	7.5	20	(8)	11.6	17	(6)	9.9	10	(4)	5.8	14	8.0
Total 25 Communities	204	(76)	8.3	207	(76)	8.4	187	(72)	7.6	200	(70)	7.7	189	(71)	7.7	197	8.0
Total Remaining Communites (326)	66	(24)		64	(24)		74	(28)		84	(30)		76	(29)		73	
State Wide Total TB Cases	270	(100)	4.25	271	(100)	4.27	261	(100)	4.11	284	(100)	4.47	265	(100)	4.17	270	4.26

*Cities with less than 50,000 population, but categorized by the MDPH TB Division to be at higher risk for TB

Note: 2001-2005 case rates were calculated using 2000 census population data

For additional information, please visit our web page: <http://www.mass.gov/dph/cdc/tb>